

## WELCOME TO DOE'S *RCRA ORIENTATION FOR FACILITY MANAGERS* COURSEWARE

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**Background** This module comprises one component of courseware materials that were developed by DOE's Office of Environmental Policy and Assistance, RCRA/CERCLA Division, EH-413, in response to a request from the Deputy Assistant Secretary for Nuclear and Facility Safety (EH-3). The original course was titled *RCRA Orientation for Nuclear and Facility Safety* and was presented on March 5, 1997, at Germantown, MD. Presentation materials were derived from the more formal three-day course titled DOE's *RCRA Orientation Workshop*, which was developed by EH-413 under a joint funding venture that included the Savannah River Site and the Albuquerque Operations Office.

**Courseware Content** Although derived from the three-day workshop, DOE's *RCRA Orientation for Nuclear and Facility Safety* (now titled *RCRA Orientation for Facility Managers*) was expanded by developing two new modules to meet the needs of Nuclear Safety Managers. One of the new modules (*Corrective Action*) compares and contrasts RCRA closure and corrective action with CERCLA remedial action by using Oak Ridge Reservation as an example of a radioactively contaminated site closed under RCRA, but undergoing remediation under CERCLA. The other module (*Emerging Issues*) offered a snapshot of the emerging regulations that were expected to impact the Department most dramatically. The remaining courseware modules include:

- Introduction to RCRA and Liability Overview,
- Overview of Solid Waste Determination,
- Overview of Hazardous Waste Determination, and
- Permitting.

PDF "Handout" files only, which contain the aforementioned modules, are designed to serve as stand-alone resources and are equipped with: (1) A list of module contents, (2) Module-specific enabling objectives; (3) Self-assessment questions and answers; (4) A module-specific regulatory citation/key word index; and (5) A module-specific cross-link table that identifies hypertext links to additional Internet resources for hazardous waste-related information.

**Using the Courseware Materials** Within the PDF Handout modules, users are encouraged to examine the module's Regulatory-Statutory Citation/Key Word Index to identify the availability and location of topics of interest. In contrast, users can simply "dig-in" and sequentially examine the courseware's content. For less extensive reviews or to download additional course presentation materials as needed, users can return to the [RCRA Orientation for Facility Managers Home Page](#) to access electronic files containing the remaining PDF Handout and/or Vugraph files.

To assist users in accessing additional Internet resources, where possible, module-specific hypertext links have been inserted into select points within each of the six PDF Handout courseware modules. Hypertext links appear in both the slide and notes portions as either *blue italicized text* (the first time a link to a particular resource is offered in a given module) or *green italicized text* (each subsequent link to that same resource) and have been assigned to terms and phases for which additional Internet resources such as other EH-413 guidance documents, other Internet Websites, etc. are available. Upon identifying a highlighted term or phase of interest, users generally can access the additional Internet resources by clicking on the highlighted text, which will then hypertext link to another Internet resource. Additional information for obtaining those resources that are not Internet-accessible as well as the objectives, content and organization, use, list of acronyms, Internet resources, and master index is presented in the [\*Front-End Materials section\*](#) (first section).

**Feedback  
And  
Contacts**

If you have difficulty in downloading or reviewing modules comprising DOE's *RCRA Orientation for Facility Managers*, [contact our Webmaster](#) and please [provide us with feedback](#). If you are interested in attending the three-day *RCRA Orientation Workshop*, please contact the [National Environmental Training Office](#). Additional questions concerning this courseware or the information presented therein may be directed to Atam Sikri of my staff by:

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## Emerging Issues -- Module E

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### Additional Resources Cited in this Module (Internet-Accessible Unless Otherwise Noted)

RCRA Definitions of Solid and Hazardous Wastes Automated Guidance, (Windows Version 1.0), April 1997 [supersedes DOE/EH-273, August 1992],  
<http://tis-nt.eh.doe.gov/oepa/programs/rcradef.html>

Requirements for Recycling of Hazardous Waste, DOE/EH-231-001/0990,  
<http://tis-nt.eh.doe.gov/oepa/guidance/rcra/recycle.pdf>

RCRA Corrective Action Permit Requirements and Modifications Under Proposed Subpart S Rule, DOE/EH-231-023/0793; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/subpts.pdf>

RCRA Corrective Action Interim Measures Under the Proposed Subpart S Rule, DOE/EH-231-024/0793; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/interim.pdf>

RCRA Corrective Action Definitions Under Subpart F and Proposed Subpart S, DOE/EH-231-044/0394; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/definit.pdf>

Management of Corrective Action Wastes Pursuant to Proposed Subpart S, DOE/EH-231-029/0295, [http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ca\\_waste.pdf](http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ca_waste.pdf)

Use of the Corrective Action Advance Notice of Proposed Rulemaking as Guidance, EH-413 memorandum dated 4/14/97, <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/anprmemo.pdf>

DOE Consolidated Comments - Resource Conservation and Recovery Act; "Departmental Response to "Subpart S" Corrective Action ANPRM"; 61 FR 19432, 7/30/96;  
<http://tis-nt.eh.doe.gov/oepa/comments/rcra/ca-cmts.pdf>

OEPA Environmental Law Summary: Land Disposal Program Flexibility Act of 1996 (P.L. 104-119); [http://tis-nt.eh.doe.gov/oepa/law\\_sum/ldpfa.htm](http://tis-nt.eh.doe.gov/oepa/law_sum/ldpfa.htm)

LDR Program Overview, DOE/EH-231/005-0293; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf>

A Comparison of the RCRA Corrective Action and CERCLA Remedial Action Processes, DOE/EH-0365; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/rcracomp.pdf>

Environmental Protection Agency (EPA) Soil Screening Guidance; <http://tis-nt.eh.doe.gov/oepa/guidance/cercla/soil.pdf>

RCRA Permitting Guide for Hazardous & Radioactive Mixed Waste Management Facilities, Chap. 5, DOE/EH(RCRA)9705; [http://tis-nt.eh.doe.gov/oepa/guidance/rcra/permit\\_ch5.PDF](http://tis-nt.eh.doe.gov/oepa/guidance/rcra/permit_ch5.PDF)

RCRA Post-Closure Permits, DOE/EH-231-021/0593 [NOT available on OEPA Website]

RCRA Corrective Action and Closure, DOE/EH-231-051/0295; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/closur.pdf>

DOE Consolidated Comments - Resource Conservation and Recovery Act; “Consolidated Departmental Response to Proposed Hazardous Waste Identification Rule for Contaminated Media (HWIR-Media)”; <http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir2.PDF>

Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units, RCRA Regulatory Bulletin dated May 6, 1992; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/leak.pdf>

Corrective Action Management Units and Temporary Units, DOE/EH-231-043/0394; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu.pdf>

CAMU/TU Final Rule Issued, RCRA Regulatory Bulletin, May 12, 1993; [http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu\\_tu.pdf](http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu_tu.pdf)

DOE Consolidated Comments - Resource Conservation and Recovery Act; “Hazardous Waste Management System: Identification and Listing of Hazardous Waste: Hazardous Waste Identification Rule (HWIR)”; <http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir-com.pdf>

The Mixture Rule Under the Resource Conservation and Recovery Act, DOE/EH-231-005/0991; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/mixture.pdf>

The “Derived-from” Rule under the Resource Conservation and Recovery Act, DOE/EH-231-035/0693; <http://tis-nt.eh.doe.gov/oepa/guidance/rcra/derived.pdf>

Consolidated Departmental Response to Revised Standards for Hazardous Waste Combustors; Notice of Proposed Rulemaking (NPRM), 61 FR 17358, 11/7/96; <http://tis-nt.eh.doe.gov/oepa/comments/rcra/cbs-rule.pdf>

Comments on Proposed Rule Establishing Air Emission Standards for Hazardous Waste Combustors, 61 FR 17358, 05/23/97; <http://tis-nt.eh.doe.gov/oepa/comments/rcra/combust.pdf>

# Emerging Issues

Regulations impacting RCRA Subtitle C requirements and DOE issues associated with these new requirements continue to emerge. In this module, we will review some of EPA's recent actions to modify the Subtitle C program and discuss the implications of these modifications.

By the end of this module, you should be able to:

1. List some of the recent Subtitle C issues of interest to DOE; (p. E-2)
2. Summarize one principal recommendation relative to EPA's efforts to redefine the regulatory definition of solid waste; (p. E-4)
3. Define and briefly explain the two options being evaluated for redefining RCRA jurisdiction; (pp. E-4 and E-5)
4. State the significance of the initial Subpart S proposed rule relative to the RCRA corrective action program; (p. E-6)
5. Cite a recent EPA initiative to identify and implement improvements to the RCRA corrective action program; (p. E-6)
6. Briefly state the five objectives described under EPA's Subpart S Initiative; (p. E-6)
7. List legislative/regulatory initiatives affecting corrective action; (pp. E-7 to E-9)
8. Recognize the wastes and requirements that are potentially impacted by the hazardous waste identification rule (HWIR-) media and HWIR-waste rules; (pp. E-10 and E-11)
9. Distinguish between the HWIR-media Bright Line and HWIR-waste exit levels; (p. E-10) and
10. State some of DOE's concerns regarding the potential impacts of EPA's proposed hazardous waste combustor regulations. (p. E-11)

## First Issue of Interest to DOE

- Redefinition of solid waste
- EPA's Subpart S Initiative
  - legislative initiatives
  - regulatory initiatives
- Other regulatory developments
  - HWIR-waste rule
  - revised standards for hazardous waste combustors

EPA has undertaken a number of efforts that will focus and refine RCRA Subtitle C regulations. The topics listed above are some of the most broadly applicable of these efforts. We will discuss each of these topics in detail.

## Definition of Solid Waste: Historical Perspective

- First issued current definition in the January 4, 1985 FR (50 FR 614)
- Prior litigation
- Definition of Solid Waste Task Force goals:
  - eliminate disincentives
  - eliminate regulatory loopholes for recycling
  - simplify the definition of solid waste
- *Reengineering RCRA for Recycling*

As discussed earlier this morning, the assessment of whether a particular material is subject to RCRA Subtitle C jurisdiction begins when a generator determines that the material meets the regulatory *definition of solid waste* under 40 CFR 261.2. The current definition was first published in the January 4, 1985 Federal Register (50 FR 614). This definition, however, has been the focus of litigation on a number of occasions beginning in 1987 with *American Mining Congress v. EPA*, 824 F. 2d 1177 (D.C. Cir. 1987) (*AMC I*). In response to this court opinion, EPA began its efforts to redefine “solid waste” by proposing modifications in January 1988.

Since this initial proposal, EPA has expended considerable amount of effort in attempting to develop regulations that realize two of RCRA’s guiding principals: (1) protecting human health and the environmental, and (2) reducing waste and conserving energy and natural resources. To assist in this effort, in 1992 EPA formed an internal Agency task force to recommend solutions to definition of solid waste concerns. The Definition of Solid Waste Task Force was charged with addressing the recycling element of the definition of solid waste following three primary objectives:

- eliminate disincentives for the safe recycling of hazardous waste;
- eliminate regulatory loopholes for recycling that create risks to human health and the environment; and
- clarify, and if possible, simplify the definition of solid waste.

The Task Force report and recommendations titled *Reengineering RCRA for Recycling* (EPA/530-R-94-016) was issued in September 1994.

## Recent Efforts to Redefine “Solid Waste”

- Task Force principal recommendation
- Hazardous waste recycling public meeting
  - allowed EPA an opportunity to present and explain the draft rulemaking
  - facilitated stakeholder input
- Options for Redefining RCRA Jurisdiction
  - Transfer-Based option
  - In-Commerce option

The principal recommendation of the Task Force report was a proposed new recycling system that recognizes both the public’s need for protection of human health and the environment and industry’s need for a system in which recycling can compete fairly in the marketplace. The report also recommended the use of different levels of control for different types of recycling facilities.

On November 19, 1996, EPA held a public meeting to discuss its hazardous waste recycling scheme, much of which reflects Task Force recommendations. In addition to identifying two goals, this meeting offered EPA an opportunity to present and explain the draft rulemaking options being considered; and afforded stakeholders a chance to begin formulating their thoughts on the proposal, thereby ensuring adequate time to fully develop these comments.

EPA also presented at this meeting two options for redefining RCRA jurisdiction. The options being considered are the Transfer-Based option and the In-Commerce option. The Transfer-Based option focuses on three main factors for determining whether a secondary material is subject to RCRA jurisdiction: (1) where the material is recycled, (2) how the material is recycled, and (3) whether the material is classified as commodity-like material.

Under the Transfer-Based option, on-site and intra-company recycling only would be excluded from Subtitle C regulation provided certain conditions were met. In contrast, for the In-Commerce option, Subtitle C the jurisdictional determinant is the manner in which the secondary material is being recycled, not the location of the recycling operation. Therefore, under the In-Commerce option most recycling operations would be excluded. In addition to the factors that are used to determine Subtitle C jurisdiction, the exclusion would be conditioned on meeting certain requirements. These requirements constitute a major component of this rule and are addressed on the next page.



## Requirements that Constitute a Major Component of Options

- Transfer-Based option
  - definition of recycling
  - use/reuse and reclamation
  - conditions for exclusion
  - commodity-like and other exclusions
  - streamlined permitting for recycling
- Transfer-Based option and In-Commerce option have similar requirements
- Proposed rule expected in Spring 1997

In addition to publishing a list of commodity-like secondary materials and issuing case-specific variance procedures, under the revised recycling scheme EPA will address the remaining components listed above. Briefly, these components and their key elements include:

**Definition of Recycling.** Suggests that for a secondary material to be considered legitimately recycled, the material must: (1) significantly contribute to a product or process, (2) result in a product that is sold in commerce, (3) be managed to minimize losses, and (4) not increase the levels of toxic constituents in the feedstock or product.

**Use/Reuse and Reclamation.** EPA would remove the *regulatory distinctions that currently exist* between most types of secondary materials (e.g., listed versus characteristic by-products) and most forms of recycling (use/reuse as ingredient/feedstock and reclamation).

**Conditions for Exclusion.** In addition to recordkeeping and notification, proposed conditions would require that the secondary material must not be: burned for energy recovery; land disposed prior to recycling; speculatively accumulated; used in a manner constituting disposal; or designated by EPA as inherently waste-like.

**Streamlined Permitting.** EPA anticipates proposing the use of a nationally issued general permit to address secondary materials that are stored prior to being recycled. EPA is also developing a streamlined process for corrective action for these facilities.

EPA anticipates issuing the proposed redefinition of “solid waste” in Spring of 1997. This concludes the first issue of interest to DOE.

## Second Issue of Interest: EPA's Subpart S Initiative

- Published May 1, 1996 (61 FR 19432)
- Introduces EPA's strategy for promulgating Subpart S
- Provides context for corrective action revisions
- Emphasizes flexibility in current program

Regulations under 40 CFR 264 *Subpart S were initially proposed* in the July 27, 1990 (55 FR 30798). Although never finalized, this proposal constituted *EPA's most authoritative policy statement on RCRA corrective action*.

The Subpart S Initiative presented in the May 1, 1996 Federal Register (61 FR 19432) has three purposes: (1) introduces EPA's strategy for issuing regulations governing corrective action for releases from solid waste management units; (2) establishes a context for potential revisions to the corrective action program by furnishing: a general status report on the corrective action program, a description of the program's evolution since 1990, and guidance on a number of topics not fully addressed in the 1990 proposal; and (3) emphasizes flexibility within the current program and describes program improvements that are currently underway or under consideration.

The Subpart S initiative proposal has five primary objectives:

1. Create a consistent, integrated approach to cleanups at RCRA facilities.
2. Establish protective, practical cleanup expectations.
3. Shift more responsibilities for achieving cleanup goals to the regulated community.
4. Focus on opportunities to streamline and reduce costs.
5. Enhance opportunities for timely, meaningful public participation.

Thus, the Subpart S program will undergo *substantial comment* and modification before it is finalized. Subpart S modifications also will be directed by recent legislative and regulatory initiatives. These initiatives are described on the following pages.

## Legislative/Administrative Initiatives Affecting Corrective Action

- Land Disposal Program Flexibility Act of 1996
- Superfund reauthorization
- Superfund reform initiatives

The *Land Disposal Program Flexibility Act* exempts certain characteristic hazardous waste generated during cleanup from LDR requirements. In the past, remediation wastes were subject to *LDR requirements* beginning at their point of generation. Under the new law, characteristic wastes are exempt from most RCRA requirements provided: (1) they are managed in treatment systems regulated under the Clean Water Act (CWA), a CWA-equivalent treatment system, or a Class I nonhazardous injection well regulated under the Safe Drinking Water Act, and (2) they are no longer characteristic wastes at the point of disposal. The practical impact of the law is to exempt characteristic media waste from administrative regulatory requirements while still imposing the protection achieved by treating the waste before land disposal.

Congress is considering Superfund reauthorization. Possible changes include new approaches to setting cleanup standards and factoring risk into remedial decisions. Because EPA intends to maintain *parity between the Superfund and RCRA corrective action programs*, amendments to the Superfund program are likely to affect Subpart S.

Similarly, Superfund administrative reform initiatives already underway are likely to affect corrective action. Examples of such initiatives are (61 FR 19439):

- incorporating realistic land use assumptions into risk assessments, development of remedial alternatives, and remedy selection (refer to EPA Directive issued May 25, 1995, "Land Use in the CERCLA Remedy Selection Process");
- soil screening guidance to accelerate decision making at cleanup sites (refer to Superfund *Soil Screening Guidance*, April 1996 (EPA/540/R-96/018); and
- presumptive remedies (i.e., preferred technologies for common categories of cleanup sites based on historical patterns of remedy selection).

In addition to legislative/administrative initiatives, EPA rulemaking initiatives may impact the Subpart S program. The following pages address selected regulatory initiatives including the post-closure and HWIR-media proposals.

## Regulatory Initiatives Affecting Corrective Action: Post-Closure Proposal

- Proposed November 8, 1994 (59 FR 55778)
- Will allow the use of other Federal and State authorities as alternatives to *post-closure care permits*
- Would not otherwise modify the applicable cleanup requirements governing regulated units
- Will impact State corrective action enforcement authority

*Post-closure permits* are required for TSDFs that cannot remove all wastes at the time of closure. EPA proposes to provide greater flexibility in ensuring monitoring and cleanup of such units. State and federal cleanup authorities are proposed as *alternatives to a RCRA post-closure care permit* to define monitoring and cleanup requirements.

In addition, the proposed rule will affect state authority. States have never been required to obtain authority to address corrective action at interim-status facilities. The November 8, 1994 notice proposes requiring that states upgrade their judicial or administrative enforcement authority to respond to releases of hazardous waste or hazardous constituents at interim-status facilities as provided in RCRA Public Law Section 3008(h).

## Regulatory Initiatives Affecting Corrective Action: *HWIR-Media Rule*

- Proposed April 29, 1996 (61 FR 18780)
- Affects contaminated media (e.g., soil, surface water, ground water, sediment) generated during cleanup
- Intended to provide flexibility to tailor requirements for managing contaminated media
- Uses a Bright Line to exempt some media
- Revises *land disposal restrictions* (LDR), minimum technological requirements (MTRs), and permitting associated with contaminated media land disposal

The Hazardous Waste Identification Rule (HWIR) for Contaminated Media (referred to as the HWIR-media) proposed April 29, 1996 (61 FR 18780) is a regulatory reform proposal that re-examines the application of many of the RCRA hazardous waste treatment and management standards for contaminated environmental media managed during EPA or authorized state-lead cleanups. The options being considered allow regulators to tailor treatment and management requirements for contaminated media based on site- and media-specific conditions.

One major area of reform under consideration would allow is revision of *LDR*, minimum technological requirements (MTRs), and permitting requirements that apply to contaminated media. by refining them to be specific for the types of contaminated media and concerns at cleanup sites. MTRs include *liners and leachate collection* for land-based disposal units such as landfills, surface impoundments, and waste piles.

More broadly, EPA is considering an exemption from RCRA Subtitle C requirements for some contaminated media. EPA proposes to use a set of constituent concentrations known as a “Bright Line” to identify media that is eligible for an exemption from Subtitle C regulation. EPA is also proposing to allow authorized states or EPA to establish all management and treatment requirements for cleanup wastes on a site-specific basis. (61 FR 18795) Also see 61 FR 19438 of the *Subpart S Initiative proposal*.

EPA expects that the HWIR-media will largely supersede the need for *corrective action management units* (CAMUs); thus withdrawal of the *CAMU* regulations was proposed as part of the HWIR-media proposal (refer to 61 FR 18829 of the HWIR-media proposal and 61 FR 19437 of the Subpart S Initiative proposal).

The items discussed as the second issue of interest to DOE focus on legislative and regulatory initiatives that may impact the RCRA corrective action program. EPA is also involved in several rulemakings that may have little direct impact on corrective action, but may have a significant impacts on DOE. Two of these rulemakings comprise the third issue of interest to DOE and are addressed on the next two pages. These rulemakings include the HWIR-waste and the revised standards for hazardous waste combustors (HWC) proposed rules.

### Third Issue of Interest: Other Regulatory Developments: *HWIR-Waste Rule*

- Proposed December 21, 1995 (60 FR 66344)
- Applies to listed hazardous wastes including:
  - *mixtures of listed wastes with solid waste*
  - residues *derived-from listed wastes*
- Uses “exit levels” set at risk-based concentrations to determine Subtitle C jurisdiction over waste
- Impacts LDR requirements
- HWIR-waste vs HWIR-media

EPA proposed the “HWIR-waste” rule in the December 21, 1995 Federal Register (60 FR 66344). It addresses listed waste, *waste mixed with listed waste*, and waste *derived-from listed waste*. It proposes to allow these wastes to exit the Subtitle C arena provided it can be shown that all hazardous constituents in the wastes fall below one of two sets of “exit levels.” For the first set of exit levels, EPA proposes to use risk-based concentrations at which a human or wildlife could be directly exposed without suffering adverse health effects. The second set of exit levels are less conservative because these levels rely on specified management conditions to achieve overall risk protection.

Relative to the *LDR* program, EPA proposes that LDR requirements would not apply to listed waste streams whose constituents fall below exit levels at their point of generation. EPA also proposes to limit (i.e., “cap”) technology-based treatment standards using risk-based exit levels.

In contrast to *HWIR-media*, the HWIR-waste proposal focuses on listed hazardous wastes that are not undergoing remediation. However, media that contains listed hazardous wastes, mixtures, or derived-from wastes with constituent concentrations below the exit levels will be eligible for exemption. Also note that the objectives for the first set of HWIR-waste exit levels differ significantly from HWIR-media Bright-Line levels. HWIR-waste exit levels identify levels of hazardous constituents that pose no threat regardless of how the waste is managed. HWIR-media Bright Line levels simply distinguish between contaminated media that can be managed safely under cleanup authorities outside Subtitle C, and media that are so contaminated that Subtitle C management is warranted.

## Other Regulatory Developments: Revised Standards for Hazardous Waste Combustors

- Published April 19, 1996 (61 FR 17358)
- Proposed under both RCRA Subtitle C and Clean Air Act authority
- Establishes standards for broad spectrum of hazardous air pollutants (HAPs) and surrogates
- Applicable to hazardous waste incinerators
- Requires compliance with MACT standards
- *DOE concerns*

EPA has proposed Revised Standards for Hazardous Waste Combustors under the joint authority of the Resource Conservation and Recovery Act (RCRA) and the Clean Air Act (CAA) [April 19, 1996 Federal Register (61 FR 17358)]. In this proposed rule, EPA integrates the monitoring, compliance testing, recordkeeping, and permitting requirements of the RCRA and CAA. Standards are being proposed to address the emissions of several hazardous air pollutants (HAPs) including: dioxins/furans (D/F), mercury (Hg), two semivolatile metals (SVM) (cadmium and lead), four low-volatility metals (LVM) (antimony, arsenic, beryllium, and chromium), hydrochloric acid (HCl) and chlorine gas (Cl<sub>2</sub>)(combined), and particulate matter (PM), as well as two bulk gas surrogates -- carbon monoxide and hydrocarbons. These standards, when finalized, will constitute National Emission Standards for Hazardous Air Pollutants (NESHAPs) and will govern the combustion of hazardous waste in DOE hazardous and mixed waste incinerators. Standards will limit HAP/surrogate emissions from the affected sources to the level of the maximum achievable control technology (MACT), as compared to current reliance on particulate matter limitations, technology-based standards for hydrogen chloride, and destruction and removal efficiency for organics.

Some of the major *DOE concerns* include: (1) implementation of the proposed rule at Federal facilities, particularly DOE facilities and the appropriateness of creating a subcategory for Federal facilities/government; (2) creating a subcategory for mixed waste incinerators; and (3) the applicability of the new MACT standards to other thermal treatment technologies (e.g., vitrification) and hazardous waste combustors used for research, development, and demonstrations and/or treatability studies.

## Self-Assessment Questions: Emerging Issues Module

### I. Circle the correct answer(s).

1. EPA's Subpart S initiative deals with:  
a. Hazardous waste combustors                      c. Corrective action  
b. Redefinition of solid waste                      d. Recycling
2. What are the two options for redefining RCRA jurisdiction over solid waste:  
a. Bright Line                      c. Transfer-based  
b. In-Commerce                      d. Product sold in commerce
3. The HWIR-Media Rule will affect the following:  
a. Land Disposal Restrictions                      c. Exempt eligible media from Subtitle C  
b. Flexibility of managing contaminated media                      d. Corrective action at an interim-status facility
4. Which of the following treatment systems allow characteristic waste (that is centrally managed) to be exempt from most RCRA requirements under the Land Disposal Program Flexibility Act:  
a. Clean Water Act (CWA)                      c. Permitted hazardous waste management unit  
b. CWA-equivalent                      d. Class I nonhazardous injection well

### II. Complete the statement.

1. List three of the five primary objectives of the EPA Subpart S initiative:  
a. \_\_\_\_\_ c. \_\_\_\_\_  
b. \_\_\_\_\_
2. These levels, proposed under the Hazardous Waste Identification Rule for waste, identify levels of hazardous constituents that pose no threat regardless of how the waste is managed: \_\_\_\_\_.
3. Name three Superfund administrative reform initiatives underway likely to affect RCRA corrective action.  
a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_



## Self-Assessment Questions: Emerging Issues Module

### III. Complete the Matching Set

- |  |   |
|--|---|
| <input type="checkbox"/> 1. Not burned for energy recovery | a. Location of recycling                          |
| <input type="checkbox"/> 2. HWIR-media                     | b. Bright Line                                    |
| <input type="checkbox"/> 3. Hazardous waste combustor      | c. Condition for exclusion from Subtitle C        |
| <input type="checkbox"/> 4. In-commerce                    | d. MACT and NESHAPs                               |
| <input type="checkbox"/> 5. HWIR-waste                     | e. Exit levels                                    |
|  | f. Condition for exclusion                        |
|  | g. Manner in which secondary material is recycled |

### IV. True/False

1. ☐ Application of MACT standards to thermal treatment technologies other than combustors is a real DOE concern.
2. ☐ The Land Disposal Restrictions will be affected by the Hazardous Waste Identification Rule for waste.
3. ☐ EPA expects the Hazardous Waste Identification Rule for contaminated media to largely supersede the need for corrective action management units.

## Self-Assessment Answers: Emerging Issues Module

### I. Circle the correct answer(s).

1. EPA's Subpart S initiative deals with:  
a. Hazardous waste combustors  
b. Redefinition of solid waste  
c. **Corrective action** [See p. E-6]  
d. Recycling
2. What are the two options for redefining RCRA jurisdiction over solid waste:  
a. Bright Line  
b. **In-commerce** [See p. E-4]  
c. **Transfer-based** [See p. E-4]  
d. Product sold in commerce
3. The HWIR-Media Rule will affect the following: [for answers see p. E-9]  
a. **Land Disposal Restrictions**  
b. **Flexibility of managing contaminated media**  
c. **Eligible media exempt from Subtitle C**  
d. Corrective action at an interim-status facility
4. Which of the following treatment systems allow characteristic waste (that is centrally managed) to be exempt from most RCRA requirements under the Land Disposal Program Flexibility Act: [See p. E-7]  
a. **Clean Water Act (CWA)**  
b. **CWA-equivalent**  
c. Permitted hazardous waste management unit  
d. **Class I nonhazardous injection well**

### II. Complete the statement.

1. List three of the five primary objectives of the EPA Subpart S initiative: [See p. E-6]  
a. **Create consistent, integrated approach to RCRA cleanups**  
b. **Establish protective, practical cleanup requirements**  
c. **Shift more responsibilities for achieving clean goals to the regulated community**  
d. **Focus on opportunities to streamline and reduce costs**  
e. **Enhance opportunities for timely, meaningful public participation**
2. These levels, proposed under the Hazardous Waste Identification Rule for waste, identify levels of hazardous constituents that pose no threat regardless of how the waste is managed: **exit levels** [See p. E-10]
3. Name three Superfund administrative reform initiatives underway likely to affect RCRA corrective action. [See p. E-7]  
a. **Include land use in risk assessments, remedial alternatives, and remedy selection**  
b. **Use soil screening guidance to accelerate decision making at cleanup sites**  
c. **Recommend presumptive remedies**

## Self-Assessment Answers: Emerging Issues Module

### III. Complete the Matching Set

- |   |   |
|---|---|
| <u><b>f</b></u> 1. Not burned for energy recovery<br>[See p. E-5] | a. Location of recycling                          |
| <u><b>b</b></u> 2. HWIR-media [See p. E-9]                        | b. Bright Line                                    |
| <u><b>d</b></u> 3. Hazardous waste combustor<br>[See p. E-11]     | c. Condition for exclusion from Subtitle C        |
| <u><b>g</b></u> 4. In-Commerce [See p. E-4]                       | d. MACT and NESHAPs                               |
| <u><b>e</b></u> 5. HWIR-waste [See p. E-10]                       | e. Exit levels                                    |
|   | f. Condition for exclusion                        |
|   | g. Manner in which secondary material is recycled |

### IV. True/False

1. **T** Application of MACT standards to thermal treatment technologies other than combustors is a real DOE concern. [See p. E-11]
2. **T** The Land Disposal Restrictions will be affected by the Hazardous Waste Identification Rule for waste. [See p. E-10]
3. **T** EPA expects the Hazardous Waste Identification Rule for contaminated media to largely supersede the need for corrective action management units. [See p. E-9]

**EMERGING ISSUES MODULE  
STATUTORY-REGULATORY CITATION/KEY WORD INDEX**

**Statutory/Regulatory Citations**

<b><u>Citation(s)</u></b>	<b><u>Page Number(s)</u></b>
40 CFR 261.2 .....	E-3
40 CFR Part 264, Subpart S .....	E-2
RCRA Section 3008(h) .....	E-8

**Alphabetical Listing**

<b><u>Key Word(s)</u></b>	
Bright Line .....	E-9 and E-10
Bulk gas surrogates .....	E-11
CERCLA .....	E-7
Characteristic hazardous waste .....	E-7
Clean Air Act .....	E-11
Clean Water Act .....	E-7
Commodity .....	E-4 and E-5
Contaminated media .....	E-9 and E-10
Corrective action .....	E-5 to E-9
Corrective action management units (CAMU) .....	E-9
Definition of solid waste .....	E-2, E-3
Definition of Solid Waste Task Force .....	E-3, E-4
“Derived from” listed waste .....	E-10
Exclusion .....	E-5
Exit levels .....	E-10
Generator .....	E-3
Hazardous air pollutants .....	E-11
Hazardous waste combustors .....	E-2, E-11
Hazardous Waste Identification Rule (HWIR) .....	E-2, E-7, E-9, E-10
HWIR-media Rule .....	E-9 and E-10
HWIR-waste Rule .....	E-10
In-Commerce Option .....	E-4 and E-5
In-Transfer Option .....	E-4 and E-5
Interim status facility .....	E-8
Land disposal .....	E-7
Land Disposal Program Flexibility Act of 1966 .....	E-7
Land disposal restrictions (LDR) .....	E-7, E-9 to E-10
Land use assumptions .....	E-7
Listed waste .....	E-10

Maximum achievable control technology (MACT) .....	E-11
Minimum technological requirements (MTR) .....	E-9
Mixed waste incinerator .....	E-11
Mixtures .....	E-10
National Emission Standards for Hazardous Air Pollutants .....	E-11
Particulate matter .....	E-11
Permit .....	E-5, E-9
Point of generation .....	E-7
Point of disposal .....	E-7
Post-closure .....	E-7 to E-8
Post-closure care permit .....	E-8
Presumptive remedies .....	E-7
Public participation .....	E-6
RCRA jurisdiction .....	E-4
Reclamation .....	E-5
Recycling .....	E-3 to E-5
Remediation waste .....	E-7
Release .....	E-6
Remedy selection .....	E-7
Reuse .....	E-5
Risk assessment .....	E-7
Safe Drinking Water Act .....	E-7
Secondary material .....	E-4 and E-5
Site-specific basis .....	E-9
Soil screening .....	E-7
Solid waste .....	E-2 to E-5
Solid waste management unit (SWMU) .....	E-6
Subpart S Initiative .....	E-2, E-6, E-7, E-9
Technology-based treatment standards .....	E-10
Treatment, storage, or disposal facility (TSDF) .....	E-8
Treatment systems .....	E-7

## Emerging Issues Module Cross-Links

Module Page/Line	Cross-Link Language	Resource/Document
E-3/Notes, Line 3	“definition of solid waste”	RCRA Definitions of Solid and Hazardous Wastes Automated Guidance, (Windows Version 1.0), April 1997 [supersedes DOE/EH-273, August 1992], <a href="http://tis-nt.eh.doe.gov/oepa/programs/rcradef.html">http://tis-nt.eh.doe.gov/oepa/programs/rcradef.html</a>
E-5/Notes, Lines 10-11	“regulatory distinctions that currently exist”	Requirements for Recycling of Hazardous Waste, DOE/EH-231-001/0990, <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/recycle.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/recycle.pdf</a>
E-6/Notes, Line 1	“Subpart S”	RCRA Corrective Action Permit Requirements and Modifications Under Proposed Subpart S Rule, DOE/EH-231-023/0793; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/subpts.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/subpts.pdf</a>
E-6/Notes, Line 1	“were”	RCRA Corrective Action Interim Measures Under the Proposed Subpart S Rule, DOE/EH-231-024/0793; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/interim.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/interim.pdf</a>
E-6/Notes, Line 1	“initially”	RCRA Corrective Action Definitions Under Subpart F and Proposed Subpart S, DOE/EH-231-044/0394; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/definit.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/definit.pdf</a>
E-6/Notes, Line 1	“proposed”	Management of Corrective Action Wastes Pursuant to Proposed Subpart S, DOE/EH-231-029/0295, <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ca_waste.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ca_waste.pdf</a>
E-6/Notes, Lines 3 & 4	“EPA’s most authoritative policy statement on RCRA corrective action”	Use of the Corrective Action Advance Notice of Proposed Rulemaking as Guidance, EH-413 memorandum dated 4/14/97, <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/anprmemo.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/anprmemo.pdf</a>
E-6/Notes, Line 20	“substantial comment”	DOE Consolidated Comments - Resource Conservation and Recovery Act; “Departmental Response to "Subpart S" Corrective Action ANPRM”; 61 FR 19432, 7/30/96; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/ca-cmts.pdf">http://tis-nt.eh.doe.gov/oepa/comments/rcra/ca-cmts.pdf</a>

E-7/Notes, Line 1	“Land Disposal Program Flexibility Act”	OEPA Environmental Law Summary: Land Disposal Program Flexibility Act of 1996 (P.L. 104-119); <a href="http://tis-nt.eh.doe.gov/oepa/law_sum/ldpfa.htm">http://tis-nt.eh.doe.gov/oepa/law_sum/ldpfa.htm</a>
E-7/Notes, Line 3	“LDR requirements”	LDR Program Overview, DOE/EH-231/005-0293; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf</a>
E-7/Notes, Lines 13-14	“parity between the Superfund and RCRA corrective action programs”	A Comparison of the RCRA Corrective Action and CERCLA Remedial Action Processes, DOE/EH-0365; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/rcracomp.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/rcracomp.pdf</a>
E-7/Notes, Line 21	“Soil Screening Guidance”	Environmental Protection Agency (EPA) Soil Screening Guidance; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/cercla/soil.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/cercla/soil.pdf</a>
E-8/Slides, Lines 5-6	“post-closure care permits”	RCRA Permitting Guide for Hazardous & Radioactive Mixed Waste Management Facilities, Chap. 5, DOE/EH(RCRA)9705; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/permit_ch5.PDF">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/permit_ch5.PDF</a>
E-8/Notes, Line 1	“post-closure permits”	RCRA Post-Closure Permits, DOE/EH-231-021/0593 [NOT available on web]
E-8/Notes, Line 4	“alternatives to a RCRA post-closure care permit”	RCRA Corrective Action and Closure, DOE/EH-231-051/0295; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/closur.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/closur.pdf</a>

E-9/Slide, Line 2	“HWIR-Media Rule”	DOE Consolidated Comments - Resource Conservation and Recovery Act; “Consolidated Departmental Response to Proposed Hazardous Waste Identification Rule for Contaminated Media (HWIR-Media)”; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir2.PDF">http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir2.PDF</a>
E-9/Slide, Line 9	“land disposal restrictions (LDR)”	LDR Program Overview, DOE/EH-231/005-0293; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf</a>
E-9/Slide, Line 10	“minimum technological requirements (MTRs)”	Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units, RCRA Regulatory Bulletin, May 6, 1992; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/leak.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/leak.pdf</a>
E-9/Notes, Line 8	“LDR”	LDR Program Overview, DOE/EH-231/005-0293; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf</a>
E-9/Notes, Line 11	“liner and leachate collection”	Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units, RCRA Regulatory Bulletin, May 6, 1992; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/leak.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/leak.pdf</a>
E-9/Notes, Line 18	“Subpart S Initiative”	DOE Consolidated Comments - Resource Conservation and Recovery Act; “Departmental Response to "Subpart S" Corrective Action ANPRM”; 61 FR 19432, 7/30/96; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/ca-cmts.pdf">http://tis-nt.eh.doe.gov/oepa/comments/rcra/ca-cmts.pdf</a>
E-9/Notes, Line 19-20	“corrective action management units (CAMUs)”	Corrective Action Management Units and Temporary Units, DOE/EH-231-043/0394; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu.pdf</a>
E-9/Notes, Line 20	“CAMU”	CAMU/TU Final Rule Issued, RCRA Regulatory Bulletin, May 12, 1993; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu_tu.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/camu_tu.pdf</a>



E-10/Slide, Line 3	“HWIR-Waste Rule”	DOE Consolidated Comments - Resource Conservation and Recovery Act; “Hazardous Waste Management System: Identification and Listing of Hazardous Waste: Hazardous Waste Identification Rule (HWIR)”; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir-com.pdf">http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir-com.pdf</a>
E-10/Slide, Line 6	“mixtures of listed waste with solid waste”	The Mixture Rule Under the Resource Conservation and Recovery Act, DOE/EH-231-005/0991; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/mixture.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/mixture.pdf</a>
E-10/Slide, Line 7	“derived from listed waste”	The “Derived-from” Rule under the Resource Conservation and Recovery Act, DOE/EH-231-035/0693; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/derived.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/derived.pdf</a>
E-10/Notes, Lines 2-3	“waste mixed with listed waste”	The Mixture Rule Under the Resource Conservation and Recovery Act, DOE/EH-231-005/0991; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/mixture.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/mixture.pdf</a>
E-10/Notes, Line 3	“derived-from listed waste”	The “Derived-from” Rule under the Resource Conservation and Recovery Act, DOE/EH-231-035/0693; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/derived.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/derived.pdf</a>
E-10/Notes, Line 10	“LDR”	LDR Program Overview, DOE/EH-231/005-0293; <a href="http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf">http://tis-nt.eh.doe.gov/oepa/guidance/rcra/ldr-over.pdf</a>
E-10/Notes, Line 14	“HWIR-Media”	DOE Consolidated Comments - Resource Conservation and Recovery Act; “Consolidated Departmental Response to Proposed Hazardous Waste Identification Rule for Contaminated Media (HWIR-Media)”; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir2.PDF">http://tis-nt.eh.doe.gov/oepa/comments/rcra/hwir2.PDF</a>
E-11/Slide, Line 11	“DOE Concerns”	Consolidated Departmental Response to Revised Standards for Hazardous Waste Combustors; Notice of Proposed Rulemaking (NPRM), 61 FR 17358, 11/7/96; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/cbs-rule.pdf">http://tis-nt.eh.doe.gov/oepa/comments/rcra/cbs-rule.pdf</a>
E-11/Notes, Line 19	“DOE Concerns”	Comments on Proposed Rule Establishing Air Emission Standards for Hazardous Waste Combustors, 61 FR 17358, 05/23/97; <a href="http://tis-nt.eh.doe.gov/oepa/comments/rcra/combust.pdf">http://tis-nt.eh.doe.gov/oepa/comments/rcra/combust.pdf</a>